

CLAIMS

1. A recording medium with a laminated structure, the medium comprising:

5 a substrate;

 a recording layer provided with perpendicular magnetic anisotropy for recording of information;

 a first foundation layer located between the substrate and the recording layer;

10 an initial layer which is greater in surface tension than the foundation layer and held in contact with a recoding-layer-side surface of the foundation layer; and

 a functional layer held in contact with a recoding-layer-side surface of the initial layer.

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2. The recording medium according to claim 1, further comprising:

 a second foundation layer held in contact with a recoding-layer-side surface of the functional layer; and

 a protrusion/valley controlling layer which is greater in
20 surface tension than the second foundation layer and interposed between the second foundation layer and the recording layer.

3. The recording medium according to claim 1, wherein the functional layer comprises one of a heat sink layer, a non-magnetic
25 layer, a recording magnetic field reducing layer and a soft magnetic layer.

4. The recording medium according to claim 1, wherein the functional layer has a thickness of no less than 20nm.
5. The recording medium according to claim 2, wherein the second foundation layer is smaller in surface tension than the functional layer.
6. The recording medium according to claim 2, wherein the protrusion/valley controlling layer includes a recording-layer-side surface having a surface roughness Ra of 0.5-0.85nm.
7. The recording medium according to claim 2, wherein the protrusion/valley controlling layer has a recording-layer-side surface formed with protrusions and valleys, and wherein an average diameter of the protrusions is 5-20nm.
8. The recording medium according to claim 2, wherein the protrusion/valley controlling layer has a recording-layer-side surface formed with protrusions and valleys, the protrusions and valleys having a maximum height difference of 3-10nm.
9. The recording medium according to claim 1, wherein the recording medium is based on a magneto-optical recording technique and comprises a multi-layer structure including the recording layer for realizing MSR, MAMMOS or DWDD.

10. A method of making a recording medium, the method comprising the steps of:

forming a first foundation layer on a substrate; and

5 forming an initial layer on the foundation layer by growing islands of a material which is greater in surface tension than the foundation layer;

forming a functional layer on the initial layer; and

forming a recording layer above the functional layer.

10 11. The method according to claim 10, further comprising the steps of:

forming a second foundation layer on the functional layer, the second foundation layer being smaller in surface tension than the functional layer; and

15 forming a protrusion/valley controlling layer on the second foundation layer by growing islands of a material which is greater in surface tension than the second foundation layer;

wherein the recording layer is formed on the protrusion/valley controlling layer.

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12. The method according to claim 10, wherein the functional layer comprises one of a heat sink layer, a non-magnetic layer, a recording magnetic field reducing layer and a soft magnetic layer.

25 13. The method according to claim 10, wherein the functional layer is formed to have a thickness of no less than 20nm.